REMARKS

This paper is being provided in response to the Office Action mailed May 14, 2004, for the above-referenced application. In this response, Applicants have cancelled claims 1-19 and 29 without prejudice or disclaimer of the subject matter thereof and amended claims 20, 21, 23, 24, 25 and 28 to clarify that which Applicants consider to be the invention. Further, Applicants have amended the drawings according to the guidelines as set forth in the Office Action. Applicants respectfully submit that the amendments to the claims are fully supported by the originally-filed specification and that the amendments to the drawings do not add new subject matter.

The objection to the drawings has been addressed by amendments contained here as described above. Accordingly, Applicants respectfully request that this objection be reconsidered and withdrawn.

Applicants note that claim 27 has not been specifically addressed in the Office Action.

The rejection of claims 20-29 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,395,632 to Farrar (hereinafter "Farrar") is hereby traversed and reconsideration is respectfully requested in view of the amendments to the claims contained herein.

Independent claim 20, as amended herein, recites a semiconductor device. An organic film having low dielectric constant and including no silicon is formed on a semiconductor substrate. At least two silicon included organic films are formed on lower and upper surfaces of

the organic film having low dielectric constant, wherein a first silicon included organic film is formed on the lower surface and a second silicon included organic film is formed on the upper surface. Claims 21 and 22 depend on independent claim 20.

Independent claim 23, as amended herein, recites a semiconductor device. The device includes at least two silicon included organic films composed of a first organic compound including silicon. A silicon non-included organic film composed of a second organic compound including substantially no silicon is disposed between the silicon included organic films. Claims 25-27 depend on independent claim 23.

Independent claim 24, as amended herein, recites a semiconductor device. A first silicon included organic film is formed on an upper side of a substrate and is composed of a first organic compound including silicon. A silicon non-included organic film is formed on an upper side of the first silicon included organic film and is composed of a second organic compound including substantially no silicon and in which a wiring trench is formed down to the first silicon included organic film. A second silicon included organic film is formed on an upper side of the silicon non-included organic film. A conductor is formed within the wiring trench.

Independent claim 28, as amended herein, recites a semiconductor device. The device includes a hard mark that is for use in etching an organic film composed of an organic compound including no silicon, the hard mask including a first organic compound including silicon. The device further includes an etching stopper film for use in etching the organic film composed of

the organic compound including no silicon, the etching stopper film including a second organic compounding including silicon.

The Farrar reference discloses an interconnect structure with a plurality of low dielectric constant insulating layers acting as etch stops. Figures 16-23 of Farrar illustrates a substrate layer 50 on which is formed a BCB layer 55 on which is further formed up to three either organic SILK layers or inorganic Nanoglass layers (57, 57a and 55a). (See col. 4, lines 59-63 and col. 6, beginning line 50 of Farrar.)

Applicants' independent claims, as amended herein, recite at least the features of a semiconductor device including *an organic film having low dielectric constant and including no silicon* and *at least two silicon included organic films formed on lower and upper surfaces of the organic film having low dielectric constant.* Applicants have found that a semiconductor device having this structure enables one of the silicon included organic films to function as an etching stop layer and the other of the silicon included organic films to function as a hard mask, thereby offering improved manufacturing capability. As a result of this structure, interlayer capacitance can be beneficially reduced in a semiconductor device thus manufactured. (See page 38, lines 3-12 and page 39, lines 22-27 and Figs. 5(a)-(c) of the present application.)

Applicants respectfully submit that the Farrar reference does not teach or fairly suggest at least the above-noted features as claimed by Applicants. Farrar discloses insulating films utilized as etch stops including a BCB layer 55 disposed on a substrate on which is further disposed organic SILK layers or inorganic NANOGLASS layers (57, 57a, 55a). (See, for

example, Figure 17 of Farrar.) BCB layers are not disposed on lower and upper surfaces of a SILK layer. Applicants submit that nothing in the prior art of record discloses the semiconductor structure as claimed by Applicants including *an organic film having low dielectric constant and including no silicon* and *at least two silicon included organic films formed on lower and upper surfaces of the organic film having low dielectric constant*, and that offers the benefit of, for example, reducing interlayer capacitance, as noted above. Accordingly, Applicant respectfully requests that this rejection be reconsidered and withdrawn.

Based on the above, Applicant respectfully requests that the Examiner reconsider and withdraw all outstanding rejections and objections. Favorable consideration and allowance are earnestly solicited. Should there be any questions after reviewing this paper, the Examiner is invited to contact the undersigned at 617-248-4038.

Respectfully submitted,
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